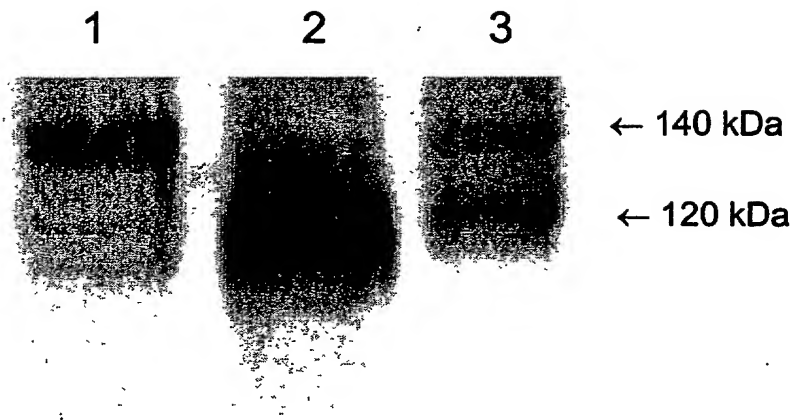
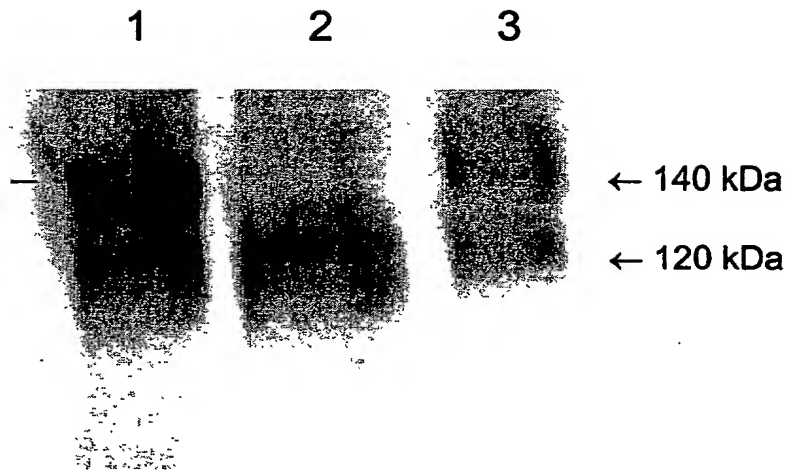


11/20  
Figure 9

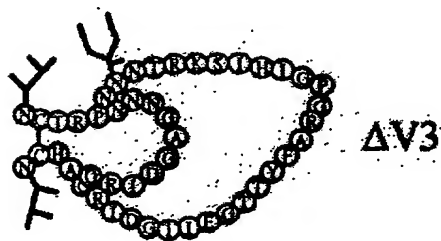
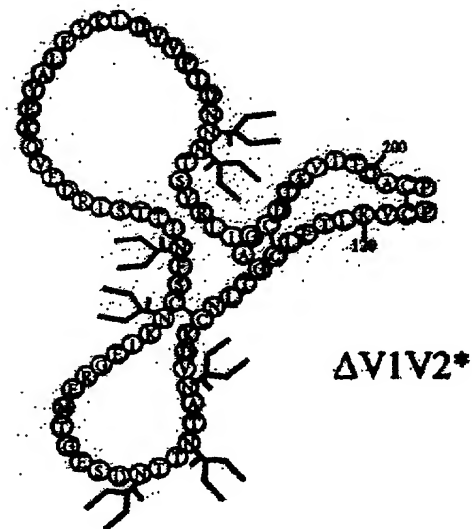
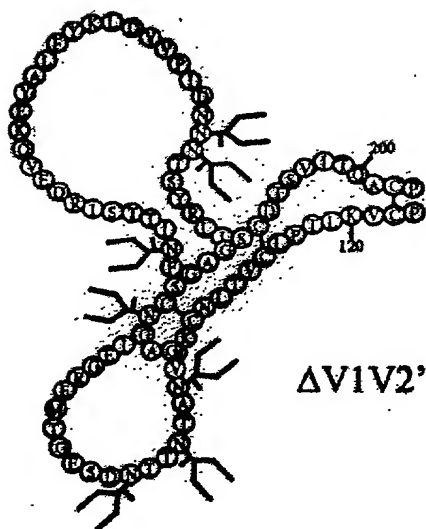
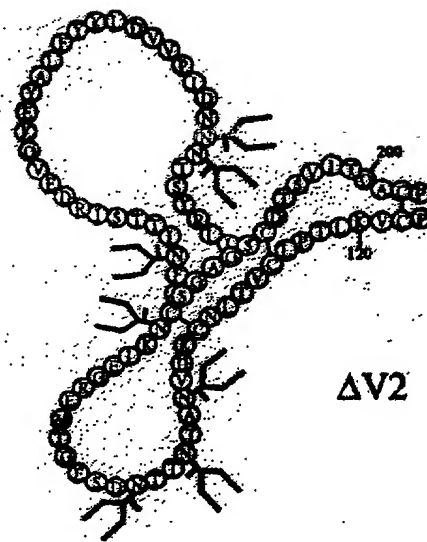
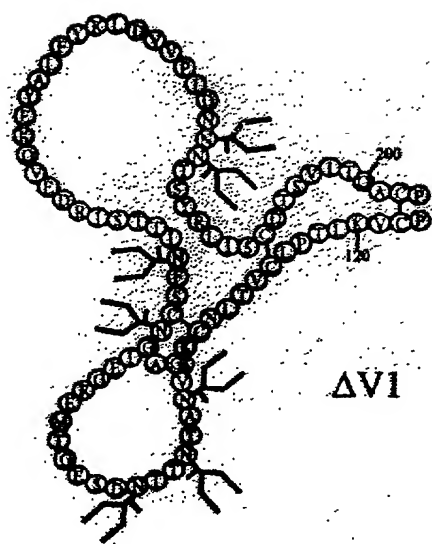
A



B



12/20  
Figure 10

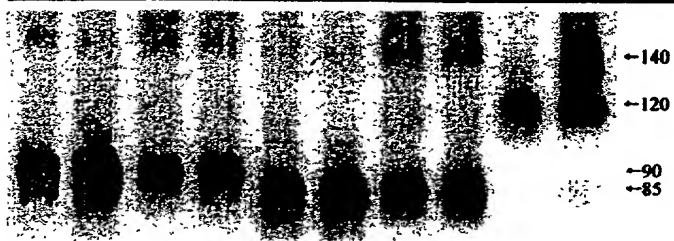


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13/20  
Figure 11

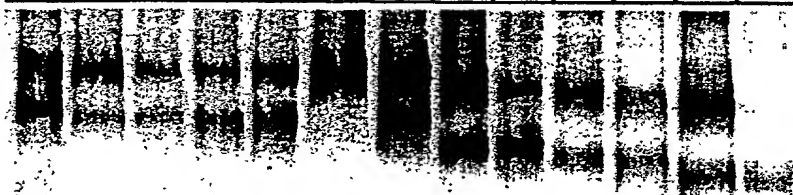
A

wt ΔV1V2*V3		CC ΔV1V2*V3		wt ΔV1V2*V3 N357Q N398Q		CC ΔV1V2*V3 N357Q N398Q		wt		envelope protein
2G12	F91	2G12	F91	2G12	F91	2G12	F91	F91	F91	antibody
1	2	3	4	5	6	7	8	9	10	lane



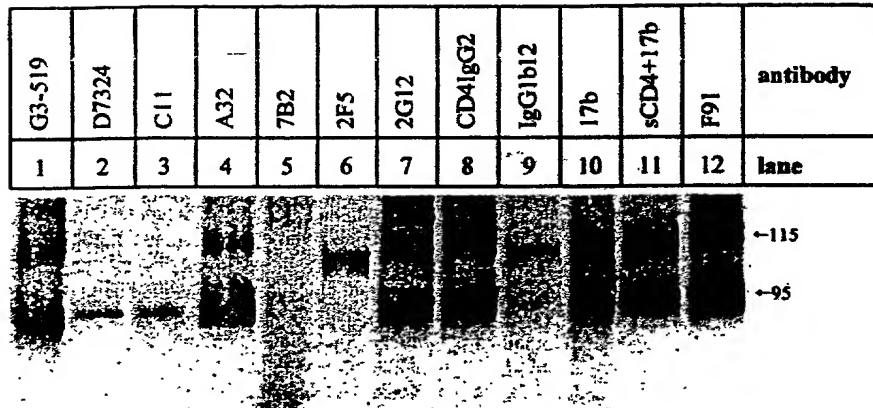
B

wt	ΔV1		ΔV2		ΔV3		ΔV1V2'		ΔV1V2*		ΔV1V2*V3		protein
CC		CC		CC		CC		CC		CC		CC	cysteines
1	2	3	4	5	6	7	8	9	10	11	12	13	lane

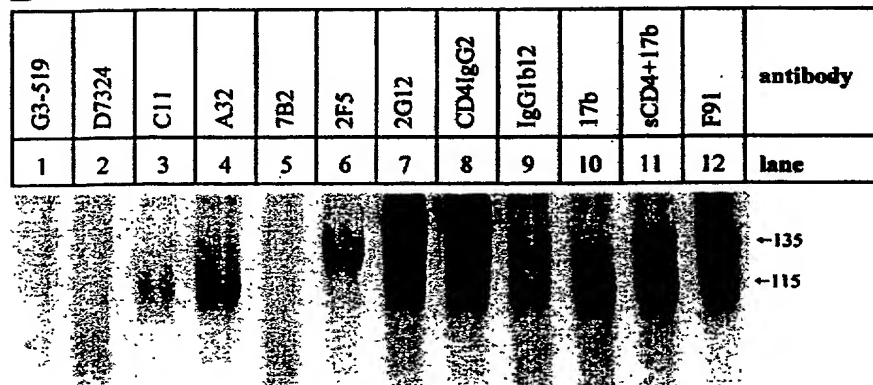


14/20  
Figure 12

**A**



**B**



15/20  
Figure 13

HIV-1<sub>JR-FL</sub> SOS gp140

(a)

1 GTAGAAAAGTTGTGGGTCACAGTCTATTATGGGGTACCTGTGTGGAAAGA  
51 AGCAACCACCACTCTATTTTGTGCATCAGATGCTAAAGCATATGATACAG  
101 AGGTACATAATGTTTGGGCCACACATGCCTGTGTACCCACAGACCCCAAC  
151 CCACAAGAAGTAGTATTGGAAAATGTAACAGAACATTTTAACATGTGGAA  
201 AAATAACATGGTAGAACAGATGCAGGAGGATATAATCAGTTTATGGGATC  
251 AAAGCCTAAAGCCATGTGTAAAATTAACCCCACTCTGTGTTACTTTAAAT  
301 TGCAAGGATGTGAATGCTACTAATAACCACTAATGATAGCGAGGGAACGAT  
351 GGAGAGAGGAGAAATAAAAACTGCTCTTTCAATATCACCACAAGCATAA  
401 GAGATGAGGTGCAGAAAGAATATGCTCTTTTTTATAAACTTGATGTAGTA  
451 CCAATAGATAATAATAATACCAGCTATAGGTTGATAAGTTGTGACACCTC  
501 AGTCATTACACAGGCCTGTCCAAAGATATCCTTTGAGCCAATTTCCCATAC  
551 ATTATTGTGCCCCGGCTGGTTTTTGCGATTCTAAAGTGTAATGATAAGACG  
601 TTCAATGGAAAAGGACCATGTAAAATGTCAGCACAGTACAATGTACACA  
651 TGGAATTAGGCCAGTAGTATCAACTCACTGCTGCTAAATGGCAGTCTAG  
701 CAGAAGAAGAGGTAGTAATTAGATCTGACAATTTACGAACAATGCTAAA  
751 ACCATAATAGTACAGCTGAAAGAATCTGTAGAAATTAATTGTACAAGACC  
801 CAACAACAATACAAGAAAAAGTATACATATAGGACCAGGGAGAGCATTTT  
851 ATACTACAGGAGAAATAATAGGAGATATAAGACAAGCACATTGTAACATT  
901 AGTAGAGCAAAATGGAATGACACTTTAAACAGATAGTTATAAAATTAAG  
951 AGAACAATTTGAGAATAAAACAATAGTCTTTAATCACTCCTCAGGAGGGG  
1001 ACCCAGAAATTGTAATGCACAGTTTTAATTGTGAAGGAGAATTTTTCTAC  
1051 TGTAATTCAACACAACCTGTTTAATAGTACTTGGAATAATAACTGAAGG  
1101 GTCAAATAACACTGAAGGAAATACTATCACACTCCCATGCAGAATAAAAC  
1151 AAATTATAAACATGTGGCAGGAAGTAGGAAAAGCAATGTATGCCCCCTCCC  
1201 ATCAGAGGACAAATTAGATGTTTCATCAAATATTACAGGGCTGCTATTAAC  
1251 AAGAGATGGTGGTATTAATGAGAATGGGACCGAGATCTTCAGACCTGGAG  
1301 GAGGAGATATGAGGGACAATTGGAGAAGTGAATTCTATAAATATAAAGTA  
1351 GTAAAAATTGAACCATTAGGAGTAGCACCCACCAAGTGCAAGAGAAGAGT  
1401 GGTGCAAAGAGAAAAAAGAGCAGTGGGAATAGGAGCTGTGTTCTTGGGT  
1451 TCTTGGGAGCAGCAGGAAGCACTATGGGCGCAGCGTCAATGACACTGACG  
1501 GTACAGGCCAGACTATTATTGTCTGGTATAGTGCAACAGCAGAACAAATTT  
1551 GCTGAGGGCTATTGAGGCGCAACAGCGTATGTTGCAACTCACAGTCTGGG  
1601 GCATCAAGCAGCTCCAGGCAAGAGTCCTGGCTGTGGAAAGATACCTAGGG  
1651 GATCAACAGCTCCTGGGGATTTGGGGTTGCTCTGGAAAACCTCATTTGCTG  
1701 CACTGCTGTGCCTTGGAATGCTAGTTGGAGTAATAAATCTCTAGATAGGA  
1751 TTTGGAATAACATGACCTGGATGGAGTGGGAAAGAGAAATTGACAATTAC  
1801 ACAAGCGAAATATACACACTAATTGAAGAATCGCAGAACCAACAAGAAAA  
1851 GAATGAACAAGAATTATTGGAATTAGATAAATGGGCAAGTTTGTGGAATT  
1901 GGTTTGACATAACAACTGGCTGTGGTAT

16/20  
Figure 13

(b)

30 VEKLWVTVYY GVPVWKEATT TLFCASDAKA YDTEVHNVWA THACVPTDPN  
80 PQEVVLENTV EHFNMWKNNM VEQMQEDIIS LWDQSLKPCV KLTPLCVTLN  
130 CKDVNATNTT NDSEGTMERG EIKNCSFNIT TSIRDEVQKE YALFYKLDVV  
180 PIDNNNTSYR LISCDTSVIT QACPKISFEP IPIHYCAPAG FAILKCNDKT  
230 FNGKGPCKNV STVQCTHGIR PVVSTQLLN GSLAEDEVVI RSDNFTNNAK  
280 TIIVQLKESV EINCTRPNNN TRKSIHIGPG RAFYTTGEII GDIRQAHCNI  
330 SRAKWNDTLK QIVIKLREQF ENKTIVFNHS SGGDPEIVMH SFNCEGEFFY  
380 CNSTQLFNST WNNNTEGSNN TEGNTITLPC RIKQIINMWQ EVGKAMYAPP  
430 IRGQIRCSSN ITGLLLTRDG GINENGTEIF RPPGGGDMRDN WRSEFYKYKV  
480 VKIEPLGVAP TKCKRRVVQR EKRAVGIGAV FLGFLGAAGS TMGAASMTLT  
530 VQARLLLSGI VQQQNNLLRA IEAQQRMQLQ TVWGIKQLQA RVLAVERYLG  
580 DQQLLGIWGC SGKLICTAV PWNASWSNKS LDRIWNNMTW MEWEREIDNY  
630 TSEIYTLIEE SQNQQEKNEQ ELLELDKWAS LWNWFDITNW LWY

1003463-1003464

17/20  
Figure 14

HIV-1<sub>JR-FL</sub> ΔV1V2\* SOS gp140

(a)

1 GTAGAAAAGTTGTGGGTCACAGTCTATTATGGGGTACCTGTGTGGAAAGA  
51 AGCAACCACCACTCTATTTTGTGCATCAGATGCTAAAGCATATGATACAG  
101 AGGTACATAATGTTTGGGCCACACATGCCTGTGTACCCACAGACCCCAAC  
151 CCACAAGAAGTAGTATTGGAATGTAACAGAACATTTTAACATGTGGAA  
201 AAATAACATGGTAGAACAGATGCAGGAGGATATAATCAGTTTATGGGATC  
251 AAAGCCTAAAGCCATGTGTAAAATTAACCCCACTCTGTGGTGCAGGATGT  
301 GACACCTCAGTCATTACACAGGCCTGTCCAAAGATATCCTTTGAGCCAAT  
351 TCCCATACATTATTGTGCCCCGGCTGGTTTTGCGATTCTAAAGTGTAATG  
401 ATAAGACGTTCAATGGAAGAGGACCATGTAAAAATGTCAGCACAGTACAA  
451 TGTACACATGGAATTAGGCCAGTAGTATCAACTCAACTGCTGCTAAATGG  
501 CAGTCTAGCAGAAGAAGAGGTAGTAATTAGATCTGACAATTTACGAACA  
551 ATGCTAAAACCATAATAGTACAGCTGAAAGAATCTGTAGAAATTAATTGT  
601 ACAAGACCCAACAACAATACAAGAAAAAGTATACATATAGGACCAGGGAG  
651 AGCATTTTATACTACAGGAGAAATAATAGGAGATATAAGACAAGCACATT  
701 GTAACATTAGTAGAGCAAAATGGAATGACACTTTAAACAGATAGTTATA  
751 AAATTAAGAGAACAATTTGAGAATAAAACAATAGTCTTTAATCACTCCTC  
801 AGGAGGGGACCCAGAAATTGTAATGCACAGTTTTAATTGTGGAGGAGAAT  
851 TTTTCTACTGTAATTCAACACAACGTGTTAATAGTACTTGGAATAATAAT  
901 ACTGAAGGGTCAAATAACACTGAAGGAAATACTATCACACTCCCATGCAG  
951 AATAAAACAAATTATAAACATGTGGCAGGAAGTAGGAAAAGCAATGTATG  
1001 CCCCTCCCATCAGAGGACAAATTAGATGTTTCATCAAATATTACAGGGCTG  
1051 CTATTAACAAGAGATGGTGGTATTAATGAGAATGGGACCGAGATCTTCAG  
1101 ACCTGGAGGAGGAGATATGAGGGACAATTGGAGAAGTGAATTATATAAAT  
1151 ATAAAGTAGTAAAATTGAACCATTAGGAGTAGCACCCACCAAGTGCAAG  
1201 AGAAGAGTGGTGCAAAGAGAAAAAGAGCAGTGGGAATAGGAGCTGTGTT  
1251 CCTTGGGTTCTTGGGAGCAGCAGGAAGCACTATGGGCGCAGCGTCAATGA  
1301 CACTGACGGTACAGGCCAGACTATTATTGTCTGGTATAGTGCAACAGCAG  
1351 AACAAATTTGCTGAGGGCTATTGAGGCGCAACAGCGTATGTTGCAACTCAC  
1401 AGTCTGGGGCATCAAGCAGCTCCAGGCAAGAGTCCTGGCTGTGGAAAGAT  
1451 ACCTAGGGGATCAACAGCTCCTGGGGATTGGGGTTGCTCTGGAAAACCTC  
1501 ATTTGCTGCACTGCTGTGCCTTGGAATGCTAGTTGGAGTAATAAATCTCT  
1551 GGATAGGATTTGGAATAACATGACCTGGATGGAGTGGGAAAGAGAAATTG  
1601 ACAATTACACAAGCGAAATATACACCCTAATTGAAGAATCGCAGAACCAA  
1651 CAAGAAAAGAATGAACAAGAATTATTGGAATTAGATAAATGGGCAAGTTT  
1701 GTGGAATTGGTTTGACATAACAACTGGCTGTGGTAT

1



19/20  
Figure 15

HIV-1<sub>JR-FL</sub> ΔV3 SOS gp140

(a)

```
1   GTAGAAAAGTTGTGGGTCACAGTCTATTATGGGGTACCTGTGTGGAAAGA
51  AGCAACCACCACTCTATTTTGTGCATCAGATGCTAAAGCATATGATACAG
101 AGGTACATAATGTTTGGGCCACACATGCCTGTGTACCCACAGACCCCAAC
151 CCACAAGAAGTAGTATTGGAAAATGTAACAGAACATTTTAACATGTGGAA
201 AAATAACATGGTAGAACAGATGCAGGAGGATATAATCAGTTTATGGGATC
251 AAAGCCTAAAGCCATGTGTAAAATTAACCCCACTCTGTGTTACTTTAAAT
301 TGCAAGGATGTGAATGCTACTAATAACCACTAATGATAGCGAGGGAACGAT
351 GGAGAGAGGAGAAATAAAAACTGCTCTTTCAATATCACCACAAGCATAA
401 GAGATGAGGTGCAGAAAGAATATGCTCTTTTTTATAAACTTGATGTAGTA
451 CCNATAGATAATAATAATACCAGCTATAGGTTGATAAGTTGTGACACCTC
501 AGTCATTACACAGGCCTGTCCAAAGATATCCTTTGAGCCAATTCCCATAC
551 ATTATTGTGCCCCGGCTGGTTTTGCATTCTAAAGTGTAATGATAAGACG
601 TTCAATGGAAAAGGNCCATGTAAAAATGTCAGCACAGTNCAATGTACACA
651 TGGAATTAGGCCAGTAGTATCAACTCAACTGCTGCTAAATGGCAGTCTAG
701 CAGAAGAAGAGGTAGTAATTAGATCTGACAATTTACGAACAATGCTAAA
751 ACCATAATAGTACAGCTGAAAGAATCTGTAGAAATTAATTGTACAAGACC
801 CAACAACAATGGAGCCGGCGATATAAGACAAGCACATTGTAACATTAGTA
851 GAGCAAAATGGAATGACACTTTAAACAGATAGTTATAAAATTAAGAGAA
901 CAATTTGAGAATAAAACAATAGTCTTTAATCACTCCTCAGGAGGGGACCC
951 AGAAATTGTAATGCACAGTTTTAATTGTGGAGGAGAATTTTTCTACTGTA
1001 ATTCAACACAACCTGTTTAATAGTACTTGGAATAATAATACTGAAGGGTCA
1051 AATAACACTGAAGGAAATACTATCACACTCCCATGCAGAATAAAACAAAT
1101 TATAACATGTGGCAGGAAGTAGGAAAAGCAATGTATGCCCCCTCCCATCA
1151 GAGGACAAATTAGATGTTTCATCAAATATTACAGGGCTGCTATTAACAAGA
1201 GATGGTGGTATTAATGAGAATGGGACCGAGATCTTCAGACCTGGAGGAGG
1251 AGATATGAGGGACAATTGGAGAAGTGAATTATATAAATATAAAGTAGTAA
1301 AAATTGAACCATTAGGAGTAGCACCCACCAAGTGCAAGAGAAGAGTGGTG
1351 CAAAGAGAAAAAAGAGCAGTGGGAATAGGAGCTGTGTTCTTGGGTTCTT
1401 GGGAGCAGCAGGAAGCACTATGGGCGCAGCGTCAATGACACTGACGGTAC
1451 AGGCCAGACTATTATTGTCTGGTATAGTGCAACAGCAGAACAATTTGCTG
1501 AGGGCTATTGAGGCGCAACAGCGTATGTTGCAACTCACAGTCTGGGGCAT
1551 CAAGCAGCTCCAGGCAAGAGTCCTGGCTGTGGAAAGATACCTAGGGGATC
1601 AACAGCTCCTGGGGATTTGGGGTTGCTCTGGAAAACCTATTTGCTGCACT
1651 GCTGTGCCTTGGAATGCTAGTTGGAGTAATAAATCTCTGGATAGGATTTG
1701 GAATAACATGACCTGGATGGAGTGGGAAAGAGAAATTGACAATTACACAA
1751 GCGAAATATACACCCTAATTGAAGAATCGCAGAACCAACAAGAAAAGAAT
1801 GAACAAGAATTATTGGAATTAGATAAATGGGCAAGTTTGTGGAATTGGTT
1851 TGACATAACAAAATGGCTGTGGTAT
```

20/20  
Figure 15

(b)

30 VEKLWVTVYY GVPVWKEATT TLFCASDAKA YDTEVHNVWA THACVPTDPN  
80 PQEVVLENTV EHFNMWKNNM VEQMQEDIIS LWDQSLKPCV KLTPLCVTLN  
130 CKDVNATNTT NDSEGTMERG EIKNCSFNIT TSIRDEVQKE YALFYKLDVV  
180 XIDNNNTSYR LISCDTSVIT QACPKISFEP IPIHYCAPAG FAILKCNDKT  
230 FNGKXPCKNV STXQCTHGIR PVVSTQLLN GSLAEDEVVI RSDNFTNNAK  
280 TIIVQLKESV EINCTRPNNN GAGDIRQAHN NISRAKWNDR LKQIVIKLRE  
330 QFENKTIVFN HSSGGDPEIV MHSFNCGGEF FYCNSTQLFN STWNNNTEGS  
380 NNTEGNTITL PCRIKQIINM WQEVGKAMYA PPIRGQIRCS SNITGLLLTR  
430 DGGINENGTE IFRPGGGDMR DNWRSELYKY KVVKIEPLGV APTKCKRRVV  
480 QREKRAVGIG AVFLGFLGAA GSTMGAASMT LTVQARLLLS GIVQQQNNLL  
530 RAIEAQQRML QLTVWGIKQL QARVLAVERY LGDQQLLGIW GCSGKLICCT  
580 AVPWNASWSN KSLDRIWNNM TWMEWEREID NYTSEIYTLI EESQNQQEKN  
630 EQELLELDKW ASLWNWFEDIT KWLWY

1003763-1374